Effects of Methamphetamine Use on Sexual Function and Male Fertility

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Background and Aim: Exposure to drugs and toxins can play an important role in male infertility. Methamphetamine (MAMP) is a central nervous system stimulant that is increasingly abused especially by young adults. Sexual disorders are the most important effects of stimulants and addictive drugs. Regarding to the excessive use of methamphetamines (crystal) among men of reproductive age, this study aimed to investigate the effects of methamphetamines on sexual function and male fertility.

Methods: This article reviews the research on the methamphetamine effects on Sexual function and male fertility. A literature search was conducted in June 2014 using the electronic databases Google Scholar, PubMed, Scopus, Web of Science and SID. Search terms used were methamphetamine, fertility, men and reproduction.

Results: The studies of amphetamines on male fertility are modeled through animal studies. Studies showed that addictive stimulant drug use initially reinforced sexual function through reducing anxiety and raising the mood temporarily but continued use of drugs gradually decreased libido which is followed by Lack of sexual arousal, orgasm or ejaculation. Findings from animal and human experiments indicate that amphetamines can reduce sperm quality. Methamphetamine use caused inflammation in seminiferous tubules of male testes and decreased quantity and motility of sperm. In vitro and in vivo male rat studies showed that a single injection of amphetamine led to decreased plasma testosterone in a dose-dependent manner. Amphetamines Inhibited testosterone production by Gonadotropin reducing. Increasing Methamphetamine consumption, increased serum levels of LH and testosterone, while FSH concentrations decreased with increasing levels of methamphetamine. Studies have found that regular high doses consumption of methamphetamine decreased the number of mature sperm in the epididymis. Acute injection of methamphetamine at different doses (5, 10, or 15 mg/kg) induced apoptosis in seminiferous tubules in male mouse testis .Methamphetamines led to disruption of normal testicular homeostasis by reducing the reproductive cells and increased apoptosis of spermatogenic cells in the testes.

Conclusion: Use of methamphetamines is often during reproductive years or during critical periods of testicular development .Methamphetamine use affects the hormonal axis and causes impairments in semen analysis and functional sperm parameters. Negative effects of methamphetamine have been proved on male fertility, including sperm function and testicular structure.

Keywords: Methamphetamine، Fertility، Reproduction